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- ☐ Letter  
☐ Memorandum  
☒ Report  
☐ Publication  
☐ Other (Specify)

## a. If letter or memo:

To:  
From:  
Subject:

## b. If report:

Title: MONTHLY ACTIVITY REPORT -  
ANALYTICAL CHEMISTRY BRANCH -  
APRIL 21, 1969 - MAY 20, 1969

4. Document Date: May 22, 1969	c. If publication: Name: Volume: Issue:
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5. Summary (2-3 lines indicating the major subject(s) of the document): Report on the work with rotational whole body counter and the experiments involving in vivo studies of radionuclides using human volunteers; routine study of biological samples, water samples and ecological samples; whole body counts; chemical interference studies in the combined Ra, Ac & Th procedure; etc.

6. Name and telephone number of person completing form:  Anjan K. Majumder (208) 525-0206	7. Organization:  Lockheed Idaho Technologies Co.	8. Date:
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## HUMAN RADIATION EXPERIMENTS

## RECORDS PROVENANCE FORM

REPOSITORY NAME		INEL
* COLLECTION NAME	ORIGINAL NAME	RESL READING FILES / MONTHLY ACTIVITY REPORTS
	NEW NAME	RADIOLOGICAL AND ENVIRONMENTAL SCIENCES LABORATORY, FILES OF DOUG CARLSON, DIRECTOR
BOX NUMBER		BOX # 1
ADDITIONAL LOCATION INFORMATION		RESL, CFA-690, ROOM # 102, ON THE FLOOR  FOLDER: MONTHLY ACTIVITY REPORT- ANALYTICAL CHEMISTRY BRANCH, 1958 - 1972
FILE TITLE		MONTHLY ACTIVITY REPORT - ANALYTICAL CHEMISTRY BRANCH - APRIL 21, 1969 - MAY 20, 1969
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DOCUMENT TITLE: MONTHLY ACTIVITY REPORT - ANALYTICAL CHEMISTRY  
BRANCH - APRIL 21, 1969 - MAY 20, 1969

CROSS REFERENCES:

ITEMS OF INTEREST:

\* A NEW COLLECTION NAME REPLACED THE ORIGINAL DUE TO  
REORGANIZATION OF RECORD SERIES

May 22, 1969

George L. Voelz, M.D., Director  
Health Services Laboratory

**MONTHLY ACTIVITY REPORT - ANALYTICAL CHEMISTRY BRANCH**  
April 21, 1969 - May 20, 1969

**ROUTINE**

Biological Samples (urine, feces, soil, etc.)	460
Water Samples (potable, effluent, etc.)	310
Air & Dusts (carbon cartridges, filters, etc.)	463
Whole Body Counts	34

**RESEARCH**

Continued Rn 222 research with emphasis on finding an explanation for the fact that material balances vary from 100% at the 10 pCi level to only 98-99% at the  $10^4$  pCi level. Current evidence still indicates that the "missing" 1-2% Rn 222 remains in the activated charcoal, even after purging it with as much as 40 liters of  $H_2$  or He.

Analyses for uranium and plutonium in urine and feces has been modified so that the strips are now done with oxalic acid-perchloric acid instead of citric acid-perchloric acid. All strips are scrubbed with xylene to remove entrained amine.

Papers are being prepared on 3 35 determination in alfalfa and the analysis of zirconium.

Continued research on Combined Ra, Th, & Ac Procedure; Po 210 by spontaneous deposition; and gross alpha method.

On the Pu 239 direct spectrum analysis, a resolution of 50 keV was obtained with Am 241 by precipitation on cerous hydroxide rather than electrodeposition.

Worked on 30 Specific Conductance Measurements for the Geological Survey; also on oyster decomposition for analysis problem.

Continued work with rotational whole body counter and made plans and preparations for the experiments involving in vivo studies of radio-nuclides using human volunteers. Continued processing data collected in previous years.

REPOSITORY

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*ANALYTICAL CHEMISTRY BRANCH*  
*1958 - 1972*

SPECIAL ACTIVITIES

A paper entitled "Radiochemical Determination of Uranium and The Trans-uranium Elements in Process Solutions and Environmental Samples" by Claude W. Sill and Rodger L. Williams was submitted to Analytical Chemistry for publication.

This paper gives some extremely important changes in the method previously used employing barium sulfate for the determination of uranium and the transuranium elements. It gives detailed information concerning the effect of interferences and the results of actual application to a wide variety of samples of practical importance.

WHOLE BODY COUNTING ACTIVITIES

Whole body counts at the Laboratory were as follows: 13 routine, 16 termination, and 5 special.

Claude W. Sill, Chief  
Analytical Chemistry Branch  
Health Services Laboratory